

25 Making Topographical Maps



A collection of landforms in an area is called its **topography** (ta-PAH-gruh-fee). In Boomtown, there are many different kinds of landforms that make its topography interesting. For example, the street map of Boomtown shows that it has a hill, river, marsh, cliff, and beach. These landforms can be identified because they are labeled on the street map.

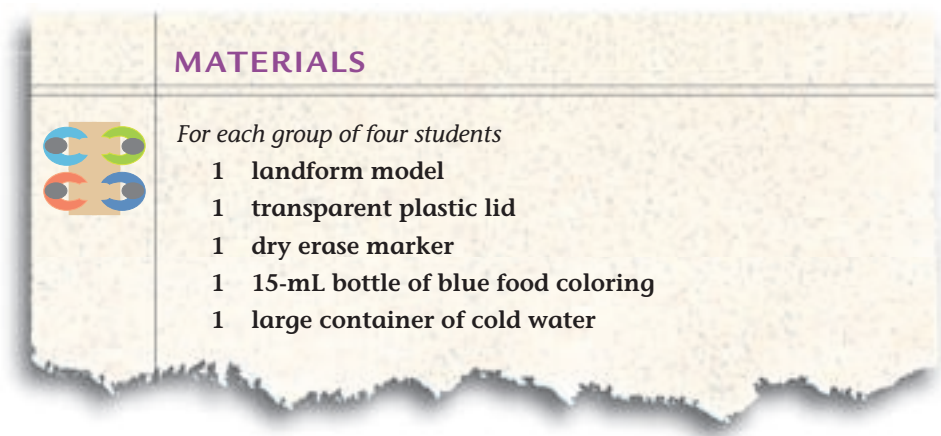
For places that are not clearly named, or where more information about the landform is needed, a **topographical map** is useful. A topographical map uses a series of lines to represent the three-dimensional shape of the land surface. Each line represents a specific elevation (el-a-VAY-shun) above sea level. For example, one line on a topographical map might represent an elevation of 100 meters. Topographical maps can be confusing for those not familiar with them. This activity will help you understand how lines on a topographical map represent the shape of the land.

CHALLENGE

What do the lines on a topographical map show?



This topographical map shows roads, trails, creeks, and lakes in addition to elevation.



PROCEDURE

1. Place 20 drops of food coloring in your container of water.
2. Place the lid on the box of the landform model and look down at the landform. Use the marker to draw a dashed line on the lid that outlines the edge of the landform.
Hint: It may help to close one eye when you're viewing the box from above. Make sure to keep your head in one place while you're drawing the line.
3. Being careful not to smudge your line, remove the lid and fill the box with water until it reaches the first step on the side of the box.
4. Place the lid on the box and then use the marker to draw at least one line that shows where the water reaches the sides of the landform.
5. Label any line you draw with a "1."
6. Add water until it reaches the next step, and repeat Steps 2–4. Label the line(s) drawn with water filled to the second step with a "2."
7. Add water to the levels of the third, fourth, and fifth steps of the box, repeating Steps 2–4 each time. Label the lines "3," "4," and "5."
8. Watch carefully as you add just enough water to cover the top of the landform. Use your observations to place an "X" on the lid above the highest point.

ANALYSIS



1. A **contour interval** is the change in elevation between adjacent lines. If each water line in your landform model represents 25 meters, what is

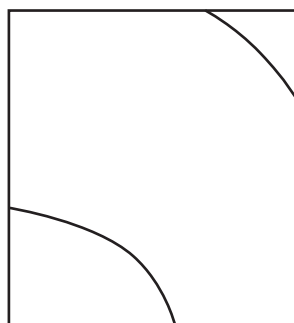
- a. the contour interval for your topographical map?
- b. an estimated height of the top of the hill?



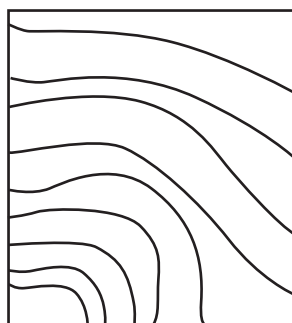
2. a. What does your topographical map show you about the land?
- b. What does your topographical map *not* show you about the land?



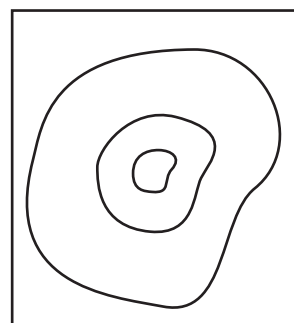
3. Compare the following diagrams that were each drawn with the same contour interval and scale.
- a. Which one shows a fairly flat area?
- b. Which one shows a hill or a valley with a gentle slope?
- c. Which one shows a steep hillside?



x



y



z



4. Look at the diagram below and answer the following questions.

- a. What kind of landform is this?
- b. Which of the locations marked on the map is the steepest?
- c. Which of the locations marked on the map is the flattest?

